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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/597,453	06/20/2000	Kenneth D. Beer	30408	6243

7590 02/12/2003

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EXAMINER

TORRES VELAZQUEZ, NORCA LIZ

ART UNIT PAPER NUMBER

1771

DATE MAILED: 02/12/2003

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/597,453		BEER ET AL.	
	Examiner		Art Unit	
	Norca L. Torres-V laquez		1771	

gm
#14

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-126 is/are pending in the application.
- 4a) Of the above claim(s) 1-12, 29-64 and 97-120 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-28, 65-96 and 121-126 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's arguments filed on December 2, 2002 have been fully considered but they are not persuasive.

a. Applicants argue that the Vane and Beer references teach different methods of securing the reinforcing fibers and that there is no teaching or motivation to modify Vane to include a batting material, in part, because Vane has solved the problem of securing the reinforcing fibers by stitching.

Applicants arguments are not found persuasive because the Beer reference teaches that the composite of their invention exhibits good structural integrity which facilitates handling of the mat and enables the fabricator to decrease mold cycle times. (Column 5, lines 43-45) Further, the reference teaches that thermoset composites fabricated from the mats of their invention exhibit good flexibility and high density to provide good load bearing capabilities, as well as high shear strength, compressive strength and interlaminar shear. (Column 5, lines 51-55)

Therefore, the inclusion of a batting material as taught by Beer et al. provides further strength to the mat of Vane. The teachings of the Beer reference not only provide a method of securing the reinforcing fibers, it also gives strength to ^{the} mat.

b. Regarding new claims 121-126, it is noted that the BEER et al. reference uses needling to entangle the layers of their mat. Since the claimed permeability is produced by treating the mat by hydro-entanglement or by needling, as disclosed on page 15, lines 13-31 of the Applicant's specification. This property would have been an expected result of the needling process taught by BEER et al.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 13-28, 65-96 and 121-126 are rejected under 35 U.S.C. 103(a) as being unpatentable over VANE (US 5055242) in view of BEER et al. (US 5910458).

VANE discloses a reinforcing material having a plurality of superimposed layers, each layer consisting of a plurality of unidirectional non-woven yarns or threads laid side-by-side, the yarns or threads in at least some of the different layers extending in different directions, the layers are stitched together. (Column 2, lines 14-21). The reference further discloses that the yarns or threads in at least two of the layers are laid so that they extend at 90° to one another. The yarns or threads in at least one further layer are laid so that they extend at an angle of from 45° to 90° with respect to the yarns or threads in at least one the two layers. (Column 2, lines 26-42). The yarns or threads used to produce the reinforcing material may be yarns, threads, rovings, tows or the like, of continuous or discontinuous fibres, of glass fibre or other suitable reinforcing material. The yarn or thread used for stitching together the layers may itself be a reinforcing material or a thermoplastic or other material. (Column 2, line 58 through Column 3, lines 1-2)

Further, the reference teaches the use of at least one sheet of thermoplastic material interposed between at least two of the reinforcing material layers. (Column 3, lines 20-21)

However, the reference does not disclose a batting layer containing fibers.

BEER et al. discloses a mat adapted to reinforce a thermosetting matrix material, the mat comprises a primary layer comprising a plurality of generally parallel, essentially continuous glass fiber strands oriented generally parallel to a longitudinal axis of the mat; and a secondary layer positioned adjacent to a surface of the primary layer that comprises a plurality of randomly oriented, generally continuous glass fiber strands. The reference further teaches that the strands of the primary layer are entangled with the strands of the secondary layer by needling together at least a portion of the strands of the primary layer and the strands secondary layer to form a mat. (Column 2, lines 16-45) The reference further teaches that the secondary layer comprises a plurality of randomly oriented glass fiber strands, which comprised generally continuous glass fiber strands and/or discontinuous or chopped glass fiber strands. (Column 14, lines 7-10)

Regarding claims 121-126, it is noted that the BEER et al. reference uses needling to entangle the layers of their mat. Since the claimed permeability is produced by treating the mat by hydro-entanglement or by needling, as disclosed on page 15, lines 13-31 of Applicant's specification. This property would have been an expected result of the needling process taught by BEER et al.

Since the BEER et al. reference teaches the use of needling, the claimed permeabilities would have been obvious properties

Since both VANE and BEER et al. are from the same field of endeavor, both of them teach reinforcement articles with layers of material that are stitch bonded; the purpose disclosed by BEER et al. would have been recognized in the pertinent art of VANE.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the reinforcing material and provide it with a layer that

contains entangling fibers such as staple material of a synthetic resin material as the layer of thermoplastic material disclosed in VANE's invention with the motivation of ensuring that the reinforcing material can be wetted during a pultrusion process as disclosed by VANE (Column 3, lines 20-37).

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Norca L. Torres-Velazquez whose telephone number is 703-306-5714. The examiner can normally be reached on Monday-Thursday 8:30-3:00 pm and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the

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organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

nlt

February 7, 2003


ELIZABETH M. COLE
PRIMARY EXAMINER